

Six lamps are supplied. The essential structure is the same but they differ as to the details of construction. In essence, each lamp is a Coleman lantern, which has been modified so as to transmit only near infra-red radiation.

The main problem is to make the filter material cool enough while still keeping the instrument light tight. This has been done by having two glass chimneys and a Fresnel lens between the butyrate covered filter and the hot light source,

The six lamps supplied are not uniform, nor are they in the form which would be supplied with a larger order. Two of the lamps have red Fresnel lenses (they are marked with red spots on the base). These lenses cut out a good deal of the stray light, and cut down the signal by about 25%. In addition the red lenses we obtained invariably crack. ^{Four} ~~Two~~ of the lamps must be lit with matches through a corked hole in the base. Two of the lamps have Sparkie lighters. The advantage of the corked holes is that the mantel can be easily observed ~~for the time being~~ during and after the lighting.

The butyrate protective coating on the filter was put on so that the edges of the filter lit up. This fault was fixed on the four lamps with white lenses, but there was not time to fix the other two. In later models the edges of the butyrate will be cemented rather than riveted. There are two holes in the outer cylinders which had to be repaired in the reworking of the

butyrate sheet.

The lamps were tested for rigidity and water tightness. Throwing the lamp overten times broke the mantle but did no great damage to the lamp itself. Dropping the ~~ma~~ lamp from a height of 18" bent the clips holding the Fresnel lens, but otherwise caused no damage. It was impossible to put the lamp ~~the lens was broken and the lamp was broken by the lens~~ out with a hose, although when the lamp was wave around with water in the top, the Fresnel lens cracked in many places.

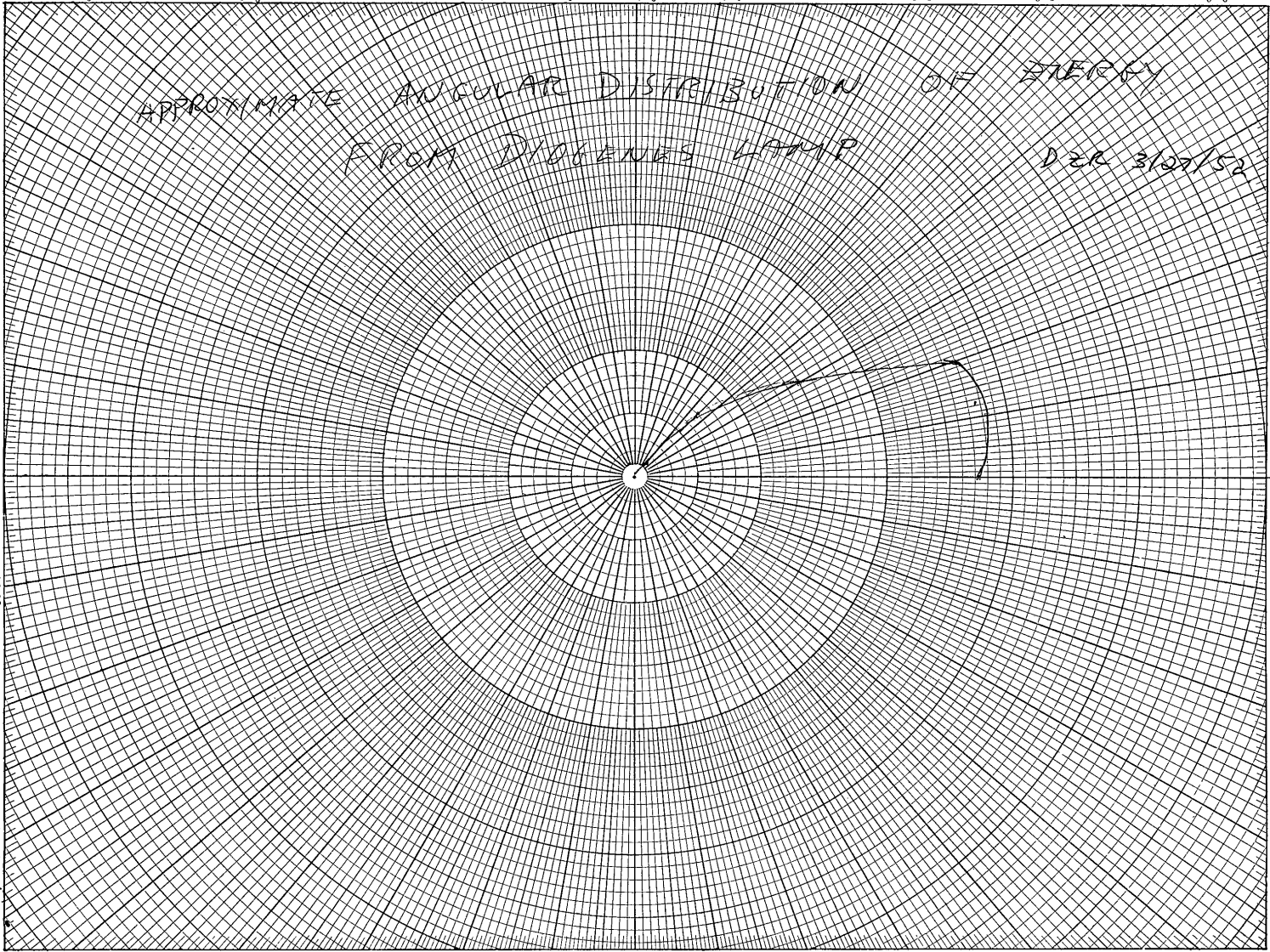
The Fresnel lenses may break as they are not Pyrex glass. We have not heard whether or not they can be obtained in Pyrex. In any event, the wiring together of the lenses keeps them in position even if they break.

A test was made of the signal as a function of angle using an S-1 photo tube. The measurements were crude since the sensitivity was low. The signal is down to five per cent of peak at 55° , and less than one per cent at 65° .

A curve is supplied.

DZR 4/8/52

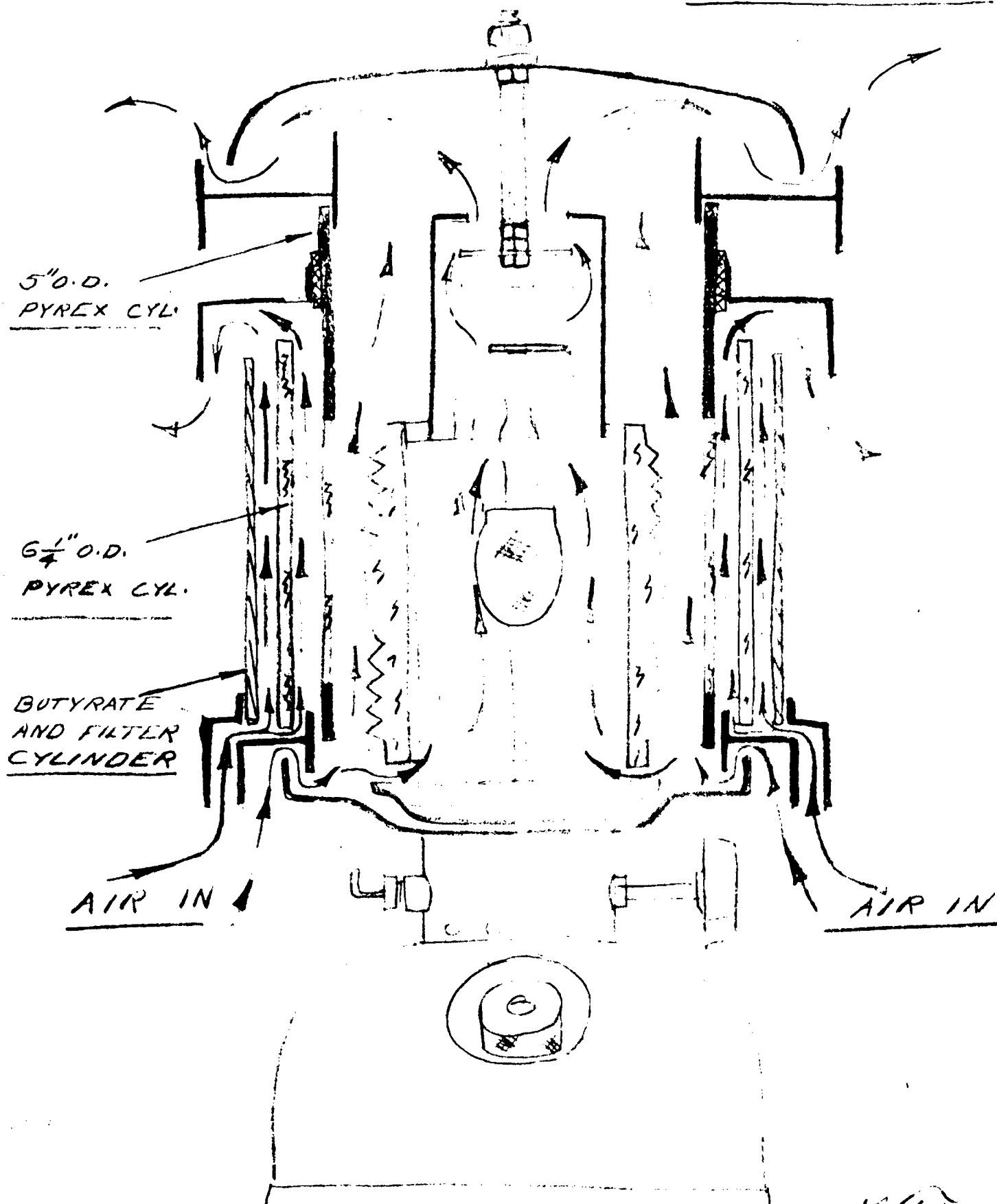
APPROXIMATE ANGULAR DISTRIBUTION OF ENERGY
FROM DIODENE LAMP
DEC 31/52



AIR CIR. SKECH

PLAN D

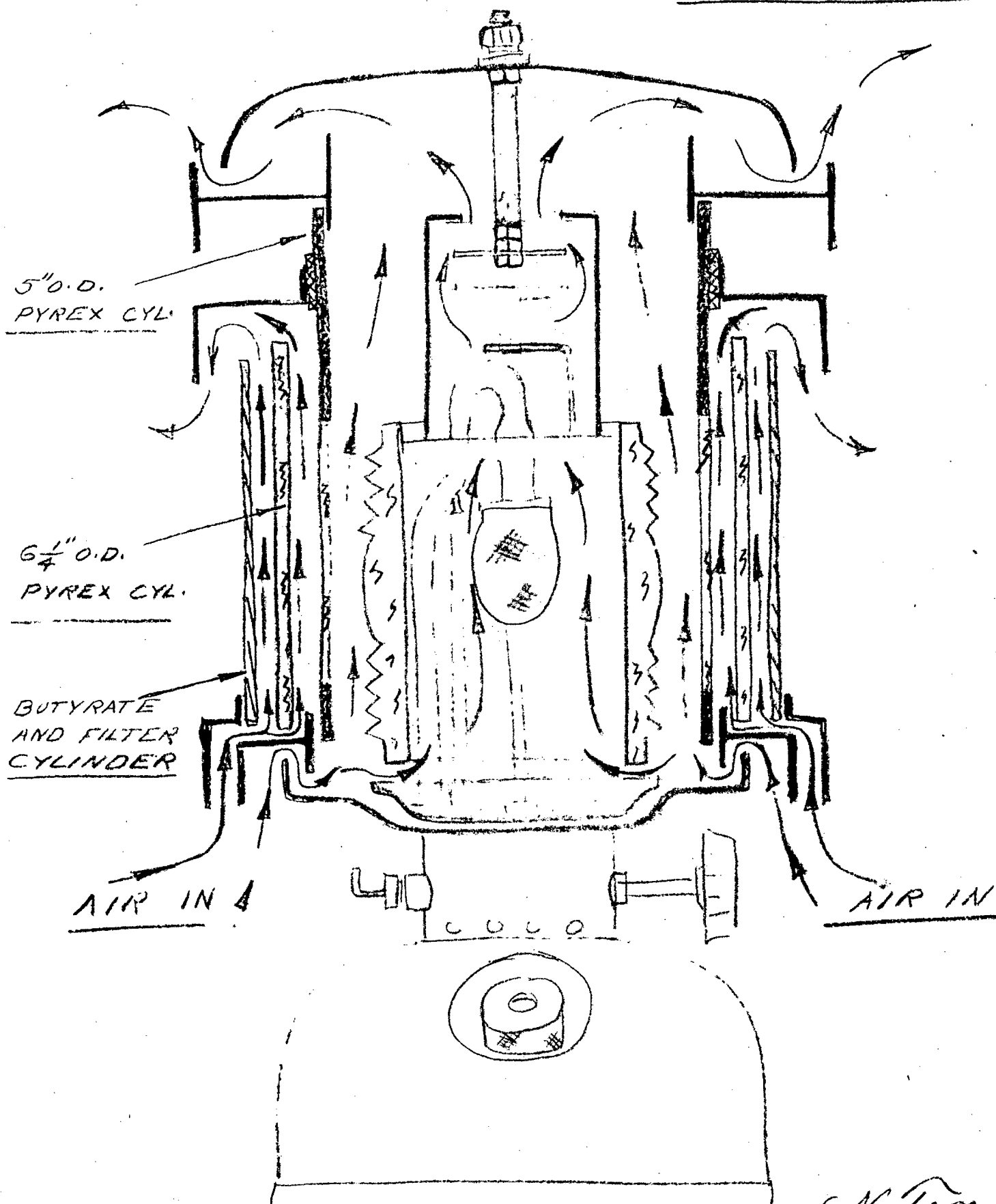
S/N # 320 - B



AIR CIRCULATION

PLAN D

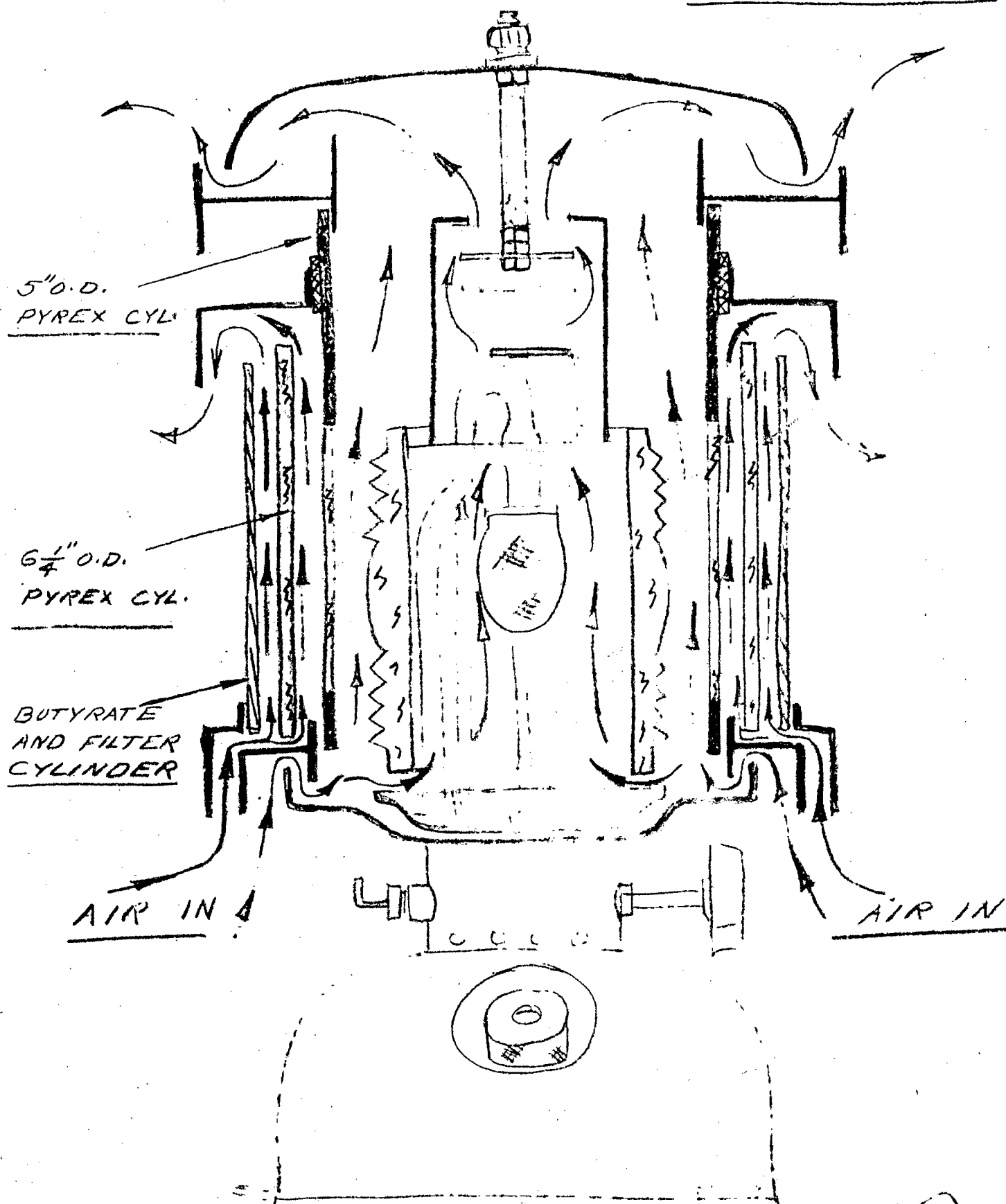
SK. # 320 - B



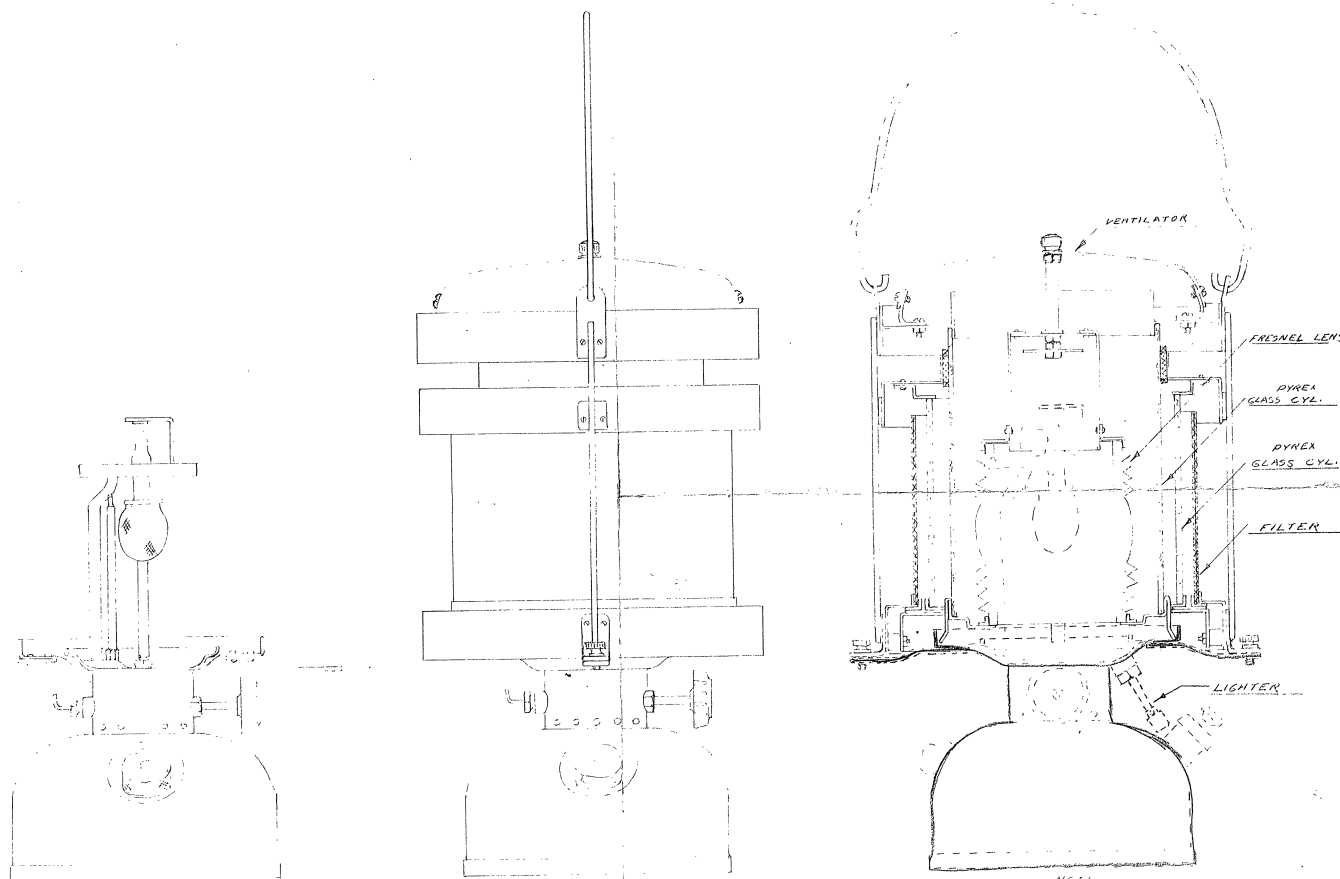
AIR CIRCULATION

PLAN D

SK. # 320 - B



9



GS	GZ	QI	DRAWING NO.	STORES NO.	ITEM	DESCRIPTION
QUAN. / GROUP						
VARIATIONS ON FINISHED DIM. UNLESS OTHERWISE MARKED			SCALE MATERIAL		FIRST MADE FOR	
BASIC	SHEET	MACHINE	FINISH		DATE	
DIMENSION	METAL	FRAC. DEC.	DRAWN	CHECKED	DATE	
UP TO 6	±.004	±.008 ±.003	1/10/50	1/29/50		
ABOVE 6	±.003	±.010 ±.005				
ABOVE 24	±.004	±.015 ±.010	APP D.			
USED ON						

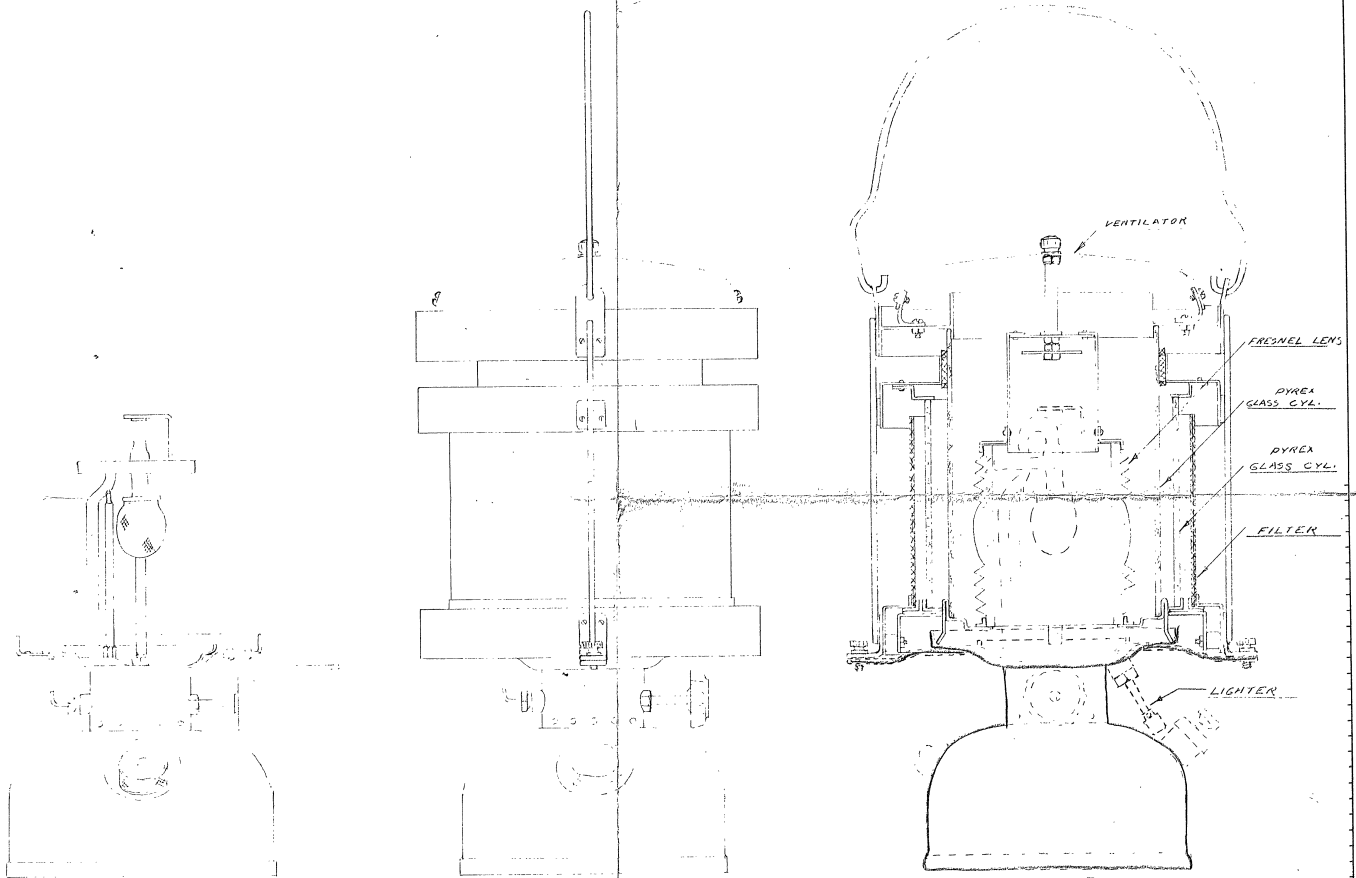
PRINTED DRAWING 1/29/50

C 1-5 349

REV.

STAT

3



NOTE

SHEET 1 OF 2

G3	G2	G1	DRAWING NO.	STORES NO.	ITEM	DESCRIPTION

VARIATIONS ON FINISHED DIM. UNLESS OTHERWISE MARKED				SCALE	MATERIAL	FINISH	DATE	REV.
BASIC	SHEET	MACHINE						
DIMENSION	METAL	FRAC. DEC.						
UP TO 6	0.125	±.005	±.003					
ABOVE 6	0.125	±.010	±.005					
USED ON	ABOVE 24	±.015	±.010	APP'D.				

PROJECT DISPOSED
J.O. # 1111
FIRST MADE FOR

C 1 5 343

STAT